

Process control plan

All records

CONTROLS IN THE ACTIVE PLAN

11

Hydraulic end cap — HC-204

SPECIAL CHARACTERISTICS

2

1 without poka-yoke or SPC

ERROR-PROOFED SHARE

18%

2 of 11 controls poka-yoke or automatic

GAUGES OVERDUE CALIBRATION

1

Position plug gauge PPG-00 · 21 days over

REACTION PLANS MISSING

0

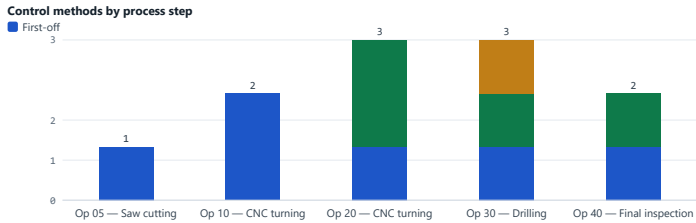
every control has one

PARTS COVERED

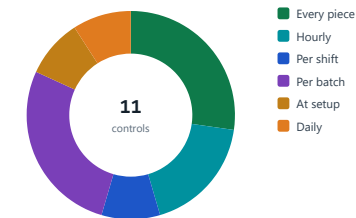
1

11 controls in total

11 of 11 record(s) included. All records. Amounts in USD.



Controls at each process step, coloured by control method. A step that is all check sheets and visual checks depends entirely on someone looking — the steps to worry about are the ones with no green in them. Controls at each process step, coloured by control method. A step that is all check sheets and visual checks depends entirely on someone looking — the steps to worry about are the ones with no green in them.



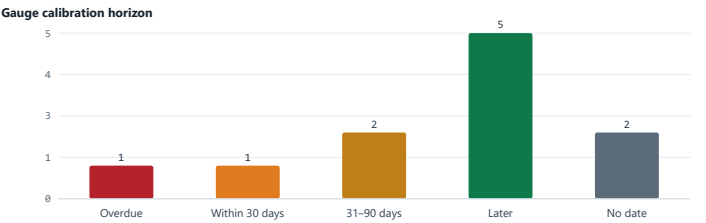
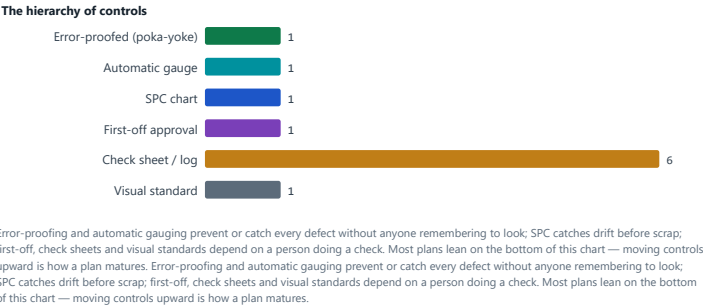
Tighter frequencies catch a problem sooner and shrink the quarantine when one is found. Weekly checks on anything that matters are usually a plan admitting it hopes for the best. Tighter frequencies catch a problem sooner and shrink the quarantine when one is found. Weekly checks on anything that matters are usually a plan admitting it hopes for the best.

The control plan

STEP	CHARACTERISTIC	TYPE	Δ	SPECIFICATION	METHOD / GAUGE	SAMPLE	FREQUENCY	CONTROL METHOD	REACTION PLAN
Op 05 — Saw cutting	Blank length	Product		82.5 ±0.5 mm	Digital caliper CAL-002	First piece	At setup	First-off	Do not release the batch to Op 10. Re-set the saw stop, cut and measur...
Op 10 — CNC turning	Coolant concentration	Process		7–9% by refractometer	Refractometer REF-003	1 reading	Daily	Check sheet	Top up or dilute to bring the concentration into range and re-check wi...
Op 10 — CNC turning	Outside diameter	Product		Ø60.00 ±0.05 mm	Micrometer MIC-007	1 pc	Hourly	Check sheet	Stop the machine. Quarantine parts made since the last good check, not...
Op 20 — CNC turning	Bore diameter	Product	Δ	Ø25.00 ±0.02 mm	Bore micrometer MIC-014	3 pcs	Hourly	SPC chart	Stop the machine on any out-of-control signal. Quarantine every part m...
Op 20 — CNC turning	Surface finish, bore	Product		Ra ≤ 1.6 µm	Roughness tester SRT-001	1 pc	Per shift	Check sheet	Quarantine parts made since the last good reading. Change the boring i...
Op 20 — CNC turning	Thread depth M12	Product		M12 × 1.75, min 18 mm full thread	Thread plug gauge TPG-031	5 pcs	Per batch	Check sheet	Hold the batch. Gauge 100% of the batch, segregate shorts for re-tappi...
Op 30 — Drilling	Burr-free hole exits	Product		No burrs at hole exits per photo standard	Visual standard board VS-12	100%	Every piece	Visual	Deburr by hand and re-inspect. If burrs repeat across consecutive part...
Op 30 — Drilling	Cross-hole position	Product		4 × Ø8.0 +0.1/0 on 45 mm PCD, true position 0.2	Position plug gauge PPG-009	2 pcs	Per batch	Check sheet	Hold the batch and gauge 100%. Notify the setter — check drill bush we...
Op 30 — Drilling	Part orientation in fixture	Process		Locating pin engaged — part cannot seat reversed	Fixture F-208 poka-yoke pin (no measurement)	100%	Every piece	Poka-yoke	If a part seats with the pin not engaged, stop and impound the fixture...
Op 40 — Final inspection	Plating thickness	Product		Zinc 8–12 µm	Coating thickness gauge CTG-005	3 pcs	Per batch	Check sheet	Hold the batch and notify the plating subcontractor. Thin plating goes...
Op 40 — Final inspection	Pressure integrity	Product	Δ	No leak at 350 bar, 30 s hold	Automated pressure test rig PRT-002	100%	Every piece	Auto gauge	Rig rejects the part automatically into the locked reject chute — no m...

Part: Hydraulic end cap
— HC-204

11 controls



Each gauge counted once, at its earliest due date. Anything overdue means measurements the plan relies on cannot currently be trusted — the checks continue, but the results prove nothing. Each gauge counted once, at its earliest due date. Anything overdue means measurements the plan relies on cannot currently be trusted — the checks continue, but the results prove nothing.

Gauge calibration schedule

Gauge / Method		Used for	Calibration due	State
Position plug gauge PPG-009		1 control	2026-07-19	Overdue
Bore micrometer MIC-014		1 control	2026-08-23	Due soon
Automated pressure test rig PRT-002		1 control	2026-09-23	Scheduled
Roughness tester SRT-001		1 control	2026-11-02	Scheduled
Micrometer MIC-007		1 control	2026-12-07	Scheduled
Refractometer REF-003		1 control	2027-01-06	Scheduled
Coating thickness gauge CTG-005		1 control	2027-01-06	Scheduled
Digital caliper CAL-002		1 control	2027-03-17	Scheduled
Thread plug gauge TPG-031		1 control	2027-06-05	Scheduled
Fixture F-208 poka-yoke pin (no measurement)		1 control	no date	No calibration date
Visual standard board VS-12		1 control	no date	No calibration date

Control plan register

Part	Step	Characteristic	Type	Special	Specification	Method / Gauge	Sample	Frequency	Control	Owner	Cal due	Added	Status	Calibration	Error-P
Hydraulic end cap — HC-204	Op 05 — Saw cutting	Blank length	Product	No	82.5 ±0.5 mm	Digital caliper CAL-002	First piece	At setup	First-off	Saw operator	2027-03-17	2026-01-11	Active	—	
	Op 10 — CNC turning	Outside diameter	Product	No	Ø60.00 ±0.05 mm	Micrometer MIC-007	1 pc	Hourly	Check sheet	Machine operator	2026-12-07	2026-01-11	Active	—	
	Op 10 — CNC turning	Coolant concentration	Process	No	7–9% by refractometer	Refractometer REF-003	1 reading	Daily	Check sheet	Machine operator	2027-01-06	2026-01-11	Active	—	
	Op 20 — CNC turning	Bore diameter	Product	Yes	Ø25.00 ±0.02 mm	Bore micrometer MIC-014	3 pcs	Hourly	SPC	Machine operator	2026-08-23	2026-01-11	Active	Cal due soon	
	Op 20 — CNC turning	Thread depth M12	Product	No	M12 × 1.75, min 18 mm full thread	Thread plug gauge TPG-031	5 pcs	Per batch	Check sheet	Machine operator	2027-06-05	2026-01-11	Active	—	
	Op 20 — CNC turning	Surface finish, bore	Product	No	Ra ≤ 1.6 µm	Roughness tester SRT-001	1 pc	Per shift	Check sheet	Shift leader	2026-11-02	2026-01-11	Active	—	
	Op 30 — Drilling	Part orientation in fixture	Process	No	Locating pin engaged — part cannot seat reversed	Fixture F-208 poka-yoke pin (no measurement)	100%	Every piece	Poka-yoke	Cell leader	—	2026-01-11	Active	—	Err
	Op 30 — Drilling	Cross-hole position	Product	No	4 × Ø8.0 +0.1/0 on 45 mm PCD, true position 0.2	Position plug gauge PPG-009	2 pcs	Per batch	Check sheet	Machine operator	2026-07-19	2026-01-11	Active	Cal overdue	
	Op 30 — Drilling	Burr-free hole exits	Product	No	No burrs at hole exits per photo standard	Visual standard board VS-12	100%	Every piece	Visual	Machine operator	—	2026-01-11	Active	—	
Hydraulic end cap — HC-204	Op 40 — Final inspection	Pressure integrity	Product	Yes	No leak at 350 bar, 30 s hold	Automated pressure test rig PRT-002	100%	Every piece	Auto gauge	Final inspector	2026-09-23	2026-01-11	Active	—	
	Op 40 — Final inspection	Plating thickness	Product	No	Zinc 8–12 µm	Coating thickness gauge CTG-005	3 pcs	Per batch	Check sheet	Final inspector	2027-01-06	2026-01-21	Active	—	

Notes

Sample plan — replace every control with your own before releasing it or showing it to a customer.

A control plan documents intent. It does not measure anything, and it cannot tell whether the checks it describes are actually being done, at the frequency stated, with the gauge named, by someone who knows the reaction plan. Audits and customers compare this document to what the operator at the machine actually does — keep the two identical, and revise the plan whenever the process changes. Nothing here is certification, compliance sign-off or engineering advice.